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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,320	06/21/2001	Arjun Selvakumar	IO-1016-US	5384

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EXAMINER

SAINT SURIN, JACQUES M

ART UNIT PAPER NUMBER

2856

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,320

Applicant(s)

SELVAKUMAR ET AL.

Examiner

Jacques M Saint-Surin

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 and 48-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-37 and 48-56 is/are allowed.
- 6) ☒ Claim(s) 38-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the amendment of 08/15/03.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Devolk et al. (US Patent 5,852,242) in view of Rihn (US Patent 3,877,296).

Regarding claim 38, Devolk et al. ('242) discloses a method of operating an accelerometer (sensor 10) having a measurement mass (16) positioned within a housing including top and bottom electrodes (12 and 14) positioned between corresponding top and bottom capacitor electrodes (22 and 24) (sensor assembly 10 has a body including a top cover (or cap) 12, a bottom cover (or cap) 14, a central (or proof) mass 16 between top cover 12 and bottom cover 14, and a generally rectangular frame 18 receiving such central mass 16 therein between covers 12 and 14, comprising: the measurement mass (springs 32, 34 are deformed linearly with input force applied perpendicular to the top and bottom surfaces of mass 16, see: col. 5, lines 28-30 to the housing (18). However, Devolk does not specifically disclose or suggest a resilient folded beam. Rihn ('296) discloses provides a transducer mass comprised of the element 52, the coil 60, and mirror 32, which mass is resiliently cantilevered from the vertical post 59, see: col. 6, lines 65-68. Rihn further discloses transducer mass with the two fold effect of causing (a) the mirror 32 to wobble and

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thereby produce a record of the wobbulations on the photographic film 42 through the deflections of the light beam 40, see: col. 7, lines 5-9. It would have been obvious to one having ordinary skill in the art at the time of the invention to substitute the sensor of Devolk for the transducer mass of Rihn as taught above because it includes a mass which is resiliently cantilevered and also includes the folding effect thereby making the above combination realizing effectively a measurement mass using a resilient folded beam.

Regarding claim 39, Devolk et al. ('242) discloses the small gaps cause a corresponding frame edge or mass edge or adjacent spring to act as a stop to prevent the spring leg from moving a distance greater than the yield point of the spring material, see: col. 6, lines 61-64).

4. Claims 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devolk et al. (US Patent 5,852,242) in view of Jiang (US Patent 6,128,954).

Claim 40 differs from Devolk by reciting a resilient shaped beam. Jiang ('954) discloses spring members are substantially S-shaped (col. 3, lines 26-27). Jiang further teaches each spring is S-shaped with the two half-circle shaped portions 116a and 116b, see: col. 5, lines 17-18. It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize in Devolk the spring of Jiang because it would provide a spring that is manufactured in S-shaped for the purpose of reducing distortion of the sensor signal and simplifies calibration of the sensor.

Regarding claim 41, as discussed above, it is rejected for the reasons set forth for claim 39.

5. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devolk et al. (US Patent 5,852,242) in view of Bergstrom et al. (US Patent 5,412,987).

Claims 42-43 differs from Devolk et al. by reciting a resilient straight beam. Bergstrom et al. ('987) discloses cantilever beams that are straight and flat, see: col. 4, line 17. It would have been obvious matter to one having ordinary skill in the art at the time of the invention to utilize in Devolve the straight cantilever beams of Devolk because it the proof mass that has a lateral extent spanning the lateral distance between said beams and the center of gravity of said proof mass is laterally centered between said beams, including sensing means mounted on said beams for sensing flexing of said beams in response to acceleration forces along said axis thereby providing lateral shock tolerance and high lateral stiffness in an efficient manner.

Regarding claim 43, as discussed above, it is rejected for the reasons set forth for claim 39.

Allowable Subject Matter

6. Claims 1-37 and 48-56 are allowable as indicated in the last office action.

Response to Arguments

7. Applicant's arguments with respect to claims 38-43 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M Saint-Surin whose telephone number is (703) 308-3698. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.


Jacques M. Saint-Surin
November 2, 2003

HELEN KWOK
PRIMARY EXAMINER
